

Strategy
Critical thinking.
problem solving.



Lesson (1)

Explorer in action

Date :
Class :
Period:

Lesson objectives

By the end of the lesson, the student will be able to:

- **Identify** some technology used to explore the Earth.
- **Explain** the different terms for technology.
- **Describe** how technology can be used to search for things under the ground.

"preface"

What archaeologists want to find when they explored and what tools do they use?

Accompanied activities

I took students to the computer and explain to them the problem of archeologists in how to look for underground objects and ask them to find ideas and propose technology tools for this purpose in their colleagues and then show video to the scientist albert lin and his tools. And I invite them to think about it down to the lesson elements

View Lesson

The importance of technological tools for Archaeologists:

- Allows exploration in simple and easy ways.
- Save efforts and cost.
- Specifies drilling places through scanning.



Tools used to explor Earth surface:

- Satellite and drone for images.
- (GPS) to search for a site.



The tools used to explor underground earth :

- Magnetometer: to find minerals in the ground.
- Ground penetrating radar (GPR): To find underground buried objects.

Evaluation:

What are the technological tools used by archaeologists on their exploratory trips?
Solve the book's questions page 12, 13



Lesson (2)

The evolution of technology

Strategy

Critical thinking.
problem solving.

Date :

Class :

Period:

Lesson objectives

By the end of the lesson, the student will be able to:

- **Discuss** the history of ICT.
- **Discuss** how technology is used in our daily live.
- **Develop** writing skills on computer.

"Preface"

What methods do
you use to record
information?

Accompanied activities

I take students to the computer room and discuss them in how the ancient Egyptians can solve the problem of communication and associate their information on temples and ask them to think about the Methods of recording and communicating information through the ages. Present the main points of the lesson through a presentation .

View Lesson

Stages of technology development over time:

Pre-Mechanical Revolution (3000 BC: 1450 AD):

In this era, peoples began to communicate through pictures and drawings, as in hieroglyphic writings, and then by letters and numbers and writing them down in historical documents.



The era of the mechanical revolution (1450 AD - 1840 AD):

During this period, a large amount of information was recorded, which formed an impetus to find new ways to record information. It witnessed the emergence of printing technology and was marked by the start of the use of the Pascaline machine.



The era of the electro-mechanical revolution (1840 AD: 1940 AD):

The emergence of modern means of communication, the use of electricity, and new inventions such as the telephone and the first digital computer represented a large size compared to today.



The era of the electronic revolution (1940 AD: present time):

Witness the emergence of inventions and achievements, including laptops, satellites and GPS, as well as the use of e-mail and text messages.

Evaluation: How do you use technology in your school, home and community?

Solve the book's questions page 16, 17



Lesson (3)

Components of computer systems

Strategy
problem solving.
cooperative education.

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Explain** the main components of computer systems.
- **Identify** input, output, and data.
- **Describe** different types of computer hardware.

"Preface"

**How can you use
technology in your
daily life?**

Accompanying activities

I Take the students to the computer room, divide them into groups, ask the introductory question, ask each group to make a list of the electronic devices they use, and discuss it with them, posing a problem to do a specific task with the computer, and explaining its solution by clarifying the elements of the lesson, supporting the explanation with a PowerPoint presentation.

View Lesson

Computer: An electronic device whose function is to process data and has the ability to store, retrieve and process data and information.

Basic components of a computer:

Input devices: All devices and peripherals that a user uses to enter data into a computer, such as

- | | |
|----------------|------------|
| 1 - keyboard | 2 - mouse |
| 3 - microphone | 4 - camera |
| 5- scanner. | |



Output devices: All devices and peripherals used by the user to output information from the computer, such as:

- | | |
|-------------|-----------------------------|
| 1 - screen | 2 - braille terminal system |
| 3 - speaker | 4 - speech synthesizer |
| 5- printer. | |



Computer Types:

personal computer (pc)/laptop/tablet

Evaluation:

Describe the basic devices that make up the computer and the role of each one.

Solve the book's questions page 20, 21



Lesson (4)

Software and operating systems

Strategy
concept maps.

cooperative education.

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Explain** the basic functions of operating systems and software.
- **Explain** the difference between hardware and software.

"Preface"

How does the computer communicate with you and carry out your commands?

Accompanying activities

I Take the students to the computer room and divide them into groups and ask the introductory question and show them the diagram in the book and ask each group to make a map of the concept of making another program supported by an explanation with a presentation that explains the elements of the lesson.

View Lesson

Software:

A set of commands and instructions that guide the computer on how to do its work. The software is responsible for operating the computer, controlling it, and expanding the capabilities of its processing operations.

Software types:

System software: These are programs that are designed to operate and control a computer, such as windows

Application software: It represents a group of software designed to assist the user in accomplishing tasks on the computer. Such as creating documents using the word program or a presentation using the powerpoint program.

How to process data in Microsoft Word:

- 1 - The student writes in the program.
- 2 - The operating system sends data to the central processing unit.
- 3- The CPU processes the data.
- 4- The CPU sends information to the operating system.
- 5 - The operating system receives the information and displays it on the screen.



Evaluation: What are the differences between software and hardware?

Solve the book's questions page 24, 25

Strategy
Brainstorming.
problem solving.



Lesson(5)

Support people of determination

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Explain** what assistive technology is.
- **Discuss** how technology improves the life of people of determination.
- **suggest** a technology that could improve people's lives.

"Preface"

**How can technology
help people of
determination?**

Accompanying activities

I Take the students to the computer room and divide them into groups and ask the introductory question and ask each group to present ideas in which technology has helped people of determination and discuss them with a video presentation of the scientist Albert Lynn showing how he overcame his problems using the prosthetic leg to reach the main points in the lesson.

View Lesson

Assistive technology: It is defined as any material, piece, product system, or thing that is modified or manufactured according to demand with the aim of increasing the scientific or functional efficiency of people of determination.

Some examples of assistive technology:

Screen magnification software: This software enlarges everything on the computer screen, such as words and images, and allows people with visual impairment to interact with the computer.

Alternative communication software: It helps people of determination who are speechless or hearing impaired to communicate verbally and linguistically with others as it is able to convert a written text into a speech or vice versa.

Hearing aids : help people with hearing problems and can be connected to a mobile phone. It also includes smart applications that allow them to be set through the phone.

Sports tools : Certain sports equipment(tools) allow people of determination who have lost a limb to climb mountains and practice various sports activities such as tricycles and football that emits a sound.

Evaluation: What are the technological means that contributed to helping people of determination?

Solve the book's questions page 28, 29



Lesson (6)

Common ICT problems and solutions

Strategy
problem solving.

Dialogue and discussion.

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Discuss** ICT problems experienced at school or at home
- **Discuss** how people experience problems with technology.
- **Suggest** solutions to common ICT problems

"Preface"

What problems related to information and communication technology have you experienced in your life?

Accompanying activities

I Take the students to the computer room and divide them into groups and ask the introductory question and ask each group to present the problems they experienced related to technology and discuss solutions with their colleagues while presenting some of the basic problems in the lesson and the way to solve them in a practical way.

View Lesson

Some problems and possible solutions:

PROBLEM: AN APP WON'T OPEN: Reboot the device and try to open the application again. If it does not work, make sure that you have updated the software, and if the problem does not solve the problem, reinstall the application after deleting it.

PROBLEM: THE MOUSE CURSOR ISN'T WORKING: Make sure that the mouse cable is connected to the appropriate place on the board, and it is preferable to restart the device, and if the problem is not solved, you may need to replace the mouse.

PROBLEM: YOU CAN'T FIND A FILE: Search in the Downloads folder. If you are looking for a Word document, search in the Documents folder. If you are looking for an image, search in the Pictures folder. You can always use the search box next to the Windows logo.

PROBLEM: YOUR SCREEN FREEZES: press the alt + ctrl + del buttons together for a short period of time. If this solution does not work, try turning off your device and restarting it.

PROBLEM: THE KEYBOARD ISN'T TYPING: Make sure that the keyboard cable is connected to the appropriate place connected to the motherboard, and it is preferable after that to restart the device. If the problem is not resolved, you must change the keyboard.

Evaluation: What advice would you give your classmates when using technology?

Solve the book's questions page 32, 33



Lesson (7)

Collecting, analyzing, and graphing data

Strategy
critical thinking.
dialogue and discussion.

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Identify** digital tools that I can use to organize data.
- **Present** information on a student issue by collecting, analyzing, and graphing data
- **Discuss** common student issues with my classmates.

"Preface"

How can digital media
help you organize your
information?

Accompanying activities

I Take the students to the computer room and divide them into groups and ask the introductory question and ask each group to write a list of the means they use to present a problem and discuss with them how to collect and analyze data and the best ways to present it by presenting the lesson points in a presentation.

View Lesson

The most common sources of data collection:

- 1 - Books and articles (digital and printed).
- 2 - Opinion polls.
- 3- Records and reports.
- 4 - Experiments.

data analysis :

You should review the data you collected after you finish analyzing it and then explain its meanings. You may find a huge amount of data, so it is better to extract the recurring patterns from it in order to be able to analyze it in order to organize it in a graph.

graph:

The most common graph is a column graph, as it displays different categories of information and compares them clearly. You can draw graphs on paper or create them using an Excel spreadsheet program.



Evaluation: Explain how you can collect data, analyze it and express it in a graph.

Solve the book's questions page 36, 37



Lesson (8)

Preparing reports for research results

Strategy
critical thinking.

dialogue and discussion.

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Discuss** different ways to communicate electronically.
- **Explain** how to use different types of technology to communicate with others.
- **Communicate** electronically with students and teachers.

"Preface"

What is the importance of communicating via electronic means with others?

Accompanying activities

I Take the students to the computer room and divide them into groups and ask the introductory question and ask each group to write a list of the electronic means they use to communicate with each other and discuss it with them and show them a presentation that shows the different ways of communicating and presenting information.

View Lesson

Some of the methods that scientists rely on to prepare reports:

Digital blogs: a website that displays information in chronological order based on the date of publication, and allows only one author to share his thoughts and opinions on a topic.

Digital published articles:

Social media sites: a group of sites and applications that allow users to share, comment and interact with their ideas and opinions.

Interviews: It is a conversation between two or more people (interlocutor and guest) in which questions are asked from the interviewer to obtain information from the guest.

Tv Programs: A television material that is broadcast live or recorded on the air and occupies a specific time area of television broadcast hours for any television channel.

E-mail is the most common way to share data, as you can write a short report with related files in it. As well as sharing via video chats and text messages

Evaluation: What is the most common means of communication that you use to disseminate information? prove your answer

Solve the book's questions page 40, 41



First Theme Review

Strategy
performance-based
evaluation.

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **confirm** the information, meanings and knowledge acquired in the first theme.
- **divide** the Course into units of study that are easy to review and retrieve.
- **Solve** as required by the questions in the first theme.

"Preface"

What are the main
topics of the first
theme?

View Lesson

The first question compares the following:

- 1 - The keyboard and the display screen.
- 2 - The operating system and the central processing unit.
- 3- Opinion poll and chart.

The second question :

- 1 - Mention two tools used by archaeologists to explore the earth.
- 2 - In what era was electricity used for the first time?
- 3 - Mention three peripheral devices that you use during a video chat.
- 4 - What is assistive technology, give an example.
- 5 - What is software, give an example of it.
- 6 - Determine one of the most common problems in information and communication technology and ways to solve it.
- 7 - What is the best way to analyze a large amount of data?
- 8 - Mention three ways in which researchers prepare reports about the groups they collect.

Solve the rest of the book's questions page 43





Lesson (1)

Explorer in action

Strategy
critical thinking
problem solving

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Talk** about the importance of the internet in making the world a better place.
- **Describe** how technology can be used to communicate with other people.
- **Explain** why technological solutions must match people's lives.

"Preface"

How do you use the internet to find out more about things and people you care about?

Accompanying activities

Take the students to the computer room, divide them into groups, pose the introductory question, ask each group to write what they have achieved and present it to the groups, and show them a video about anika ullah, her work and research, and what she has concluded, and explain the steps that are taken to disseminate the information through a presentation.

View Lesson

Anika ullah:

A biologist who does studies and research to serve and help the people around her through different ways.

Internet and information search:

The Internet enables us to access all kinds of information through search engines, with the need to ensure the validity and reliability of the information we have obtained. And write down the sources of this information for reference later.

Diversity of methods used to collect information:

- Through scientific studies and digital reports from the Internet.
- Through field visits to obtain information and evidence from people directly.

Using the Internet to communicate and raise awareness:

Anika ullah has been able to prepare videos and awareness campaigns on the internet to help people lead a healthier lifestyle.

Evaluation: Why is direct communication with people an important issue for researchers?

Solve the book's questions page 48, 49



Lesson (2)

Online dangers and how to be safe

Strategy

critical thinking

problem solving

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Describe** online risks and dangers.
- **Explain** the importance of keeping personal information private.
- **Discuss** ways to be safe while online.

"Preface"

What do you already do to stay safe online?

Accompanying activities

Take the students to the computer room, divide them into groups, pose the introductory question, and ask each group to write a list of safety tips related to the use of the Internet, present them and discuss them with the other groups, with a presentation for them that explains the main points of the lesson.

View Lesson

Communication via the Internet: There are many ways to communicate through the Internet, and the following must be taken into account:

- Better behavior with others. - Be kind and honest with others.
- Make sure you know the identity of the person you are communicating with.

Unsafe websites: They are unsafe websites and may be inappropriate. You should avoid them by not clicking on unknown links. If you come across one of them, leave them and tell an adult.

Share data and information:

- Do not share your personal data over the Internet without consulting.
- Make sure that access to your private information is available only to your family members and friends.
- Make sure before posting a photo or video if it is appropriate or embarrassing to you or others.

Some important terms on the Internet:

Block: When you block someone, they cannot see your posts or contact you again.

Spam messages: mail includes unwanted messages to advertise products or gather more information from you.

Downloading files: It is the process of downloading files from the Internet to your personal device, and you have to make sure of their content before downloading and choose safe sites so that your device is not infected with viruses.

Evaluation: Explain the common dangers that you may face while using the Internet?

Solve the book's questions page 52, 53



Lesson(3)

Using ICT tools in a
healthy and
ethical way

Strategy

cooperative education

Dialogue and discussion

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Discuss** communicating positive messages online.
- **Explain** what it means to use ICT tools ethically.
- **Explain** positive and negative effects of ICT tools.

"Preface"

What are some important
messages you have seen
online or on TV?

Accompanying activities

Take the students to the computer room and ask the introductory question and discuss their ideas and what they presented with an explanation of how to ethically use technology and its tools in our daily life through a presentation that explains the main points of the lesson

View Lesson

Tag: When you tag someone, this means identifying that person in a post, which enables others to enter his page and see him. Therefore, you must take into account the following:

- Make sure that the person you are referring to is not against it.
- Be sure to ask permission from him first to respect their privacy.
- Make sure your post is good and doesn't hurt anyone.

Mention the source and owners of the information: When you mention a source of information, you tell others that this information belongs to the owner of the source (individual or company) and that it is preferred to him.

Respect the law: Always make sure to respect the law. Do not go to banned websites. These websites publish inaccurate, immoral or harmful materials.

Positive effects of ICT tools:

View the news - download videos and photos - communicate with your friends and family

Negative effects of ICT tools:

- You may see something on the Internet that upsets you.
- Eye strain or headaches due to excessive use of electronic devices.
- Total reliance on the Google search site, even though it doesn't always give the right answer!

Evaluation: Explain how to use ICT tools in an ethical manner.

Solve the book's questions page 56, 57



Lesson (4)

How to search online

Strategy

cooperative education

Dialogue and discussion

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Explain** how to use browsers to search safely and correctly.
- **Discuss** the process of choosing which key terms to use in an online search.

"Preface"

Can you always find the information you need when you search?

Accompanying activities

Take the students to the computer room and divide them into groups and pose the introductory question and ask them to think of the search words they will use in a topic and what results they are expected to get.

View Lesson

Search in a safe way: Make sure to take advantage of the security features of the browsers you choose to search, such as:

- Alerts when entering an unsafe website or a download a harmful app.
- Search engines dedicated to children according to their age.
- Always make sure to browse a website that is appropriate for your age.
- Use browser tools to avoid clicking on links to inappropriate videos.

Smart search:

- Write a long sentence instead of just two or three words.
- You can use the image instead of words in the search process using the cameras button in the browser.
- Use the (+) symbol to ensure that your search includes certain words and is placed before the word.
- Use the symbol (-) to ensure that your search does not include certain words and is placed before the word.
- Use quotation marks to search for a specific sentence and limit it to this specific form.

Evaluation: Explain the security features that your browsers should include.

Solve the book's questions page 60, 61



Lesson(5)

How to check whether information online is true

Strategy

critical thinking
cooperative learning.

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Identify** the characteristics of a reliable online resource.
- **Describe** reliable and non-reliable sources of information online
- **Explain** the purpose of the Egyptian Knowledge Bank.

"Preface"

How do you know
whether information
you find online is
true?

Accompanying activities

Take the students to the computer room and divide them into groups and ask the introductory question and show them some publications from magazines, books and other sources and ask them to determine which of them is a reliable or unreliable source with their discussion through a presentation that explains the main points of the lesson.

View Lesson

Unreliable online sources:

Blogs, wikis, and social networking sites are considered unreliable sources because they may contain personal opinions, errors, or even lies.

Verify reliable sources by:

- The recentness of the publication date and the identity of the authors (who they are - their experience).
- Reliable sources are well-written and almost free from errors.
- The technical design of the pages reflects a high level of professionalism.
- The sites that have links (.org - .edu - .gov) have a high degree of credibility because they are managed by government agencies, non-profit organizations, institutions, schools and universities.
- Sites that include (.com) may be reliable, but they are often commercial and market specific products.

Egyptian Knowledge Bank:

A website created by the Egyptian government that allows citizens to have free access to its electronic library, which contains materials on various topics. The accuracy of all the information contained therein has been verified, so it is considered one of the reliable sites.

Evaluation: Discuss what makes a source reliable and what makes a source unreliable

Solve the book's questions page 64, 65



Lesson (6)

Who can help you with online problems?

Strategy

critical thinking

cooperative learning

Date :

Class :

Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Explain** common online problems.
- **Identify** who can help me with online problems.
- **Describe** the role of General Department for Combating Internet Crimes in Egypt.

"Preface"

If someone was unkind to you online, what would you do? Who would you tell?

Accompanying activities

Take the students to the computer room and divide them into groups and ask the introductory question and listen to some of the problems they faced and how they overcame them with the support of the lesson with a presentation explaining the problems they might face on the Internet and how to solve them and comparing the solution and what they suggested.

View Lesson

online bullying:

Bullying is repeated unkind behavior towards someone. through mean posts, messages, or hurtful texts.

Therefore, always make sure not to communicate with people unknown to you, and to inform your teacher or a family member in such situations.

Online identity theft:

There is a possibility that someone steals your identity and when this happens, the thief can use your personal information and can also use your accounts, address and phone number.

When you encounter this type, tell your teacher or a family member you trust, because he may call for the intervention of the competent authorities, represented by the police (The General Department for Combating Internet Crimes in Egypt.) to solve this problem.



Evaluation: Discuss the role of The General Department for Combating Internet Crimes in Egypt.

Solve the book's questions page 68, 69.



Lesson (7)

My personal digital safety plan

Strategy
critical thinking
creative thinking

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Describe** the importance of creating strong passwords.
- **Explain** the importance of good antivirus software.
- **Explain** ways to protect devices from online dangers.

"Preface"

Why is it important to have strong passwords?

Accompanying activities

Take the students to the computer room and divide them into groups and ask the introductory question and discuss their answers as well as how to protect their devices. Then ask them to prepare a safety plan for using the Internet and each group compares its plan with the other groups after presenting the main lesson points through a presentation.

View Lesson

Create a strong password: It is important to have a strong password, if it is easy to predict, some people may be able to enter your computer and this is known as hacking or hacking.

Criteria for creating a strong password:

- Do not use a single password to access all of your accounts.
- Use a password management system or make a list of them and keep them in a safe place.
- The password does not include your name or any other personal information.
- It consists of eight letters (distributed between letters, numbers and special symbols).

Choose an antivirus program: Viruses can cause problems such as:

- Send messages without your knowledge to the addresses of people on your device.
- Delete or destroy your files.

Antivirus programs monitor before they infect your device, eliminate them, and repair damaged files.

When using the Internet:

Maintain your security while using the Internet by choosing strong passwords and anti-virus programs, and you can follow the security services offered by some sites.

Evaluation: Is it better to have one password or different passwords? Explain

Solve the book's questions page 72, 73



Lesson (8)

Practicing what you learned

Strategy
critical thinking
creative thinking

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **Discuss** topics that I would like to research with my classmates.
- **Identify** an important topic to raise awareness.
- **Choose** a suitable presentation tool

"preface"

What topic are you interested in researching? Why?

Accompanying activities

Take the students to the computer room and divide them into groups and ask the introductory question and ask each group to present an idea and put it up for discussion in front of the other groups, specifying the steps they will follow to research the topic with support with a presentation explaining the main points of the lesson.

View Lesson

Researchers prepare digital reports on the subject of their study in different ways, including:

A.Powerpoint presentations:

PowerPoint is an interesting way to present ideas, and your presentation can include images and texts on the topic of research with some sound and animation effects through a set of slides provided by Microsoft.



videos :

You can prepare a video as a presentation method . everything you need is a computer or a mobile phone, and you can record the video while presenting your ideas with sound and image with the addition of different audio and visual effects.



posters:

One of the fun and effective ways to present your ideas is to make posters. Use bright colors to write information and make the poster look like a painting through graphics and pictures. You must write in a large font so that others can read it from a distance.



Evaluation: Explain the different ways you can present your research to others

Solve the book's questions page 76, 77



Second Theme Review

Strategy
performance-based
evaluation

Date :
Class :
Period:

Lesson objectives

By the end of the lesson the student will be able to:

- **confirm** the information, meanings and knowledge acquired in the first theme.
- **divide** the course into units of study that are easy to review and retrieve.
- **Solve** as required by the questions in the first theme.

"preface"

What are the most
important topics of
the second theme?

View Lesson

A - Write and compare

Write a sentence for each of the following pairs of phrases to explain the connection between them, then compare your sentences with those of a colleague.

- 1 - Blocking and bullying.
- 2 - Electronic sources and mention the sources of information and their owners
- 3 - Identity theft and spam

B - Read and answer

- 1 - List three sources researchers can use to do research
- 2 - What do computer viruses do to a device and to the information on the device?
- 3 - What should you do before tagging a friend in a photo or post?
- 4 - Why is it helpful to put a phrase in quotes during an online search?
- 5 - What is one reason a blog may not be a reliable source?
- 6 - What is an example of online bullying?
- 7 - What is hacking?
- 8 - What is powerpoint?

Solve the rest of the book's questions on page 79